

REMARKS

Favorable reconsideration of this application, in light of the following discussion and in view of the present amendment, is respectfully requested.

Claim 4 is amended for a minor grammatical error. Claims 1, 2, 4-7, 9-17, 20-32, 34-44, 46-53 and 55-58 are pending.

I. Rejections under 35 U.S.C. § 103

In the Office Action, at page 3, numbered paragraph 5, claims 1-7, 9-17, 22-31, 36-44, 46-53 and 55-58 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,276,436 to Shaw et al., U.S. Patent 5,886,545 to Sakuda et al. and U.S. Patent No. 5,491,805 to Welmer. This rejection is respectfully traversed because the combination of the teachings of Shaw, Sakuda and Welmer does not suggest that:

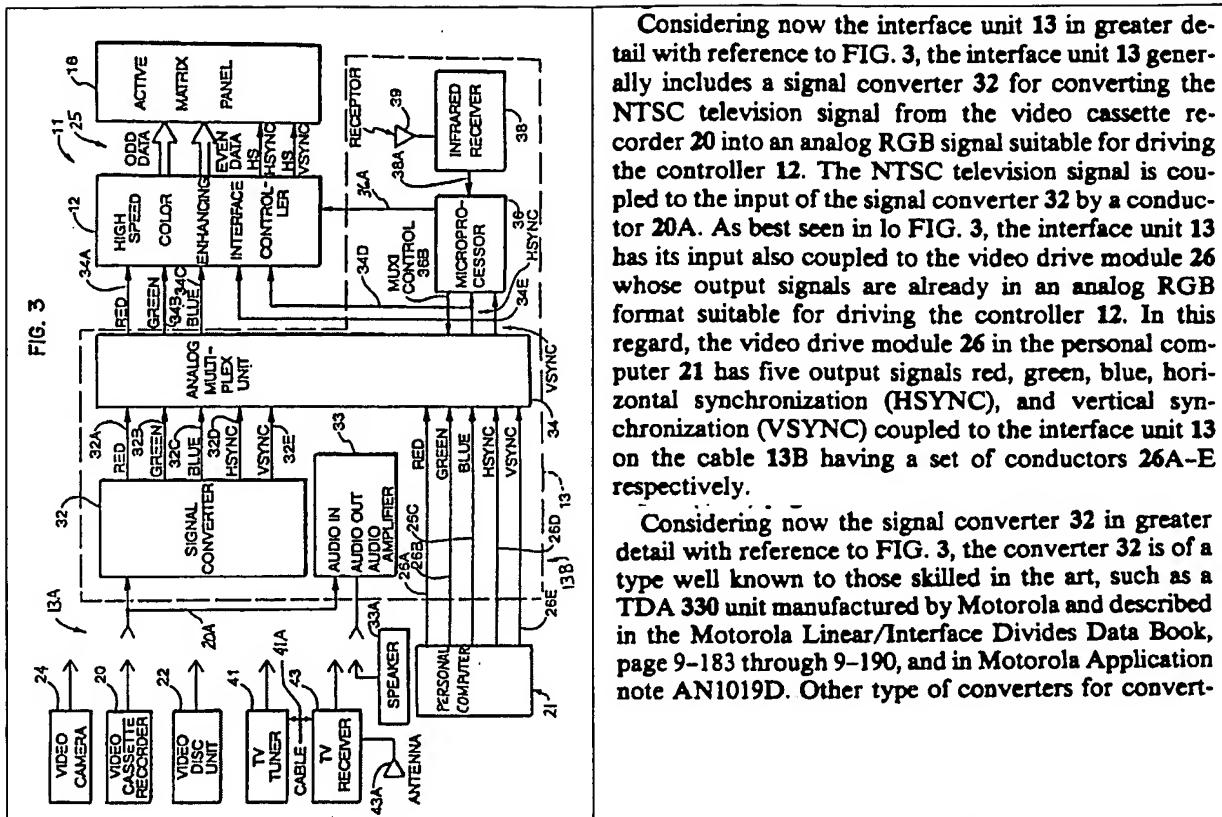
the signal checking unit senses whether an input signal cable is connected to the display device and checks whether the identified input signal is abnormal by decoding the identified input signal when the input signal cable is connected to the display device,

as recited in independent claim 1.

The present invention of claim 1, for example, discusses that the signal checking unit only checks whether the identified input signal is abnormal by decoding the identified input signal when the input signal cable is connected to the display device.

The Examiner alleges that Shaw teaches that a signal checking unit checks whether an identified input signal is abnormal by decoding the identified input signal, alleging that Fig. 3 shows that the signal converter 32 decoded the synchronizing signals from the inputted video signals and col. 9, lines 53-64 explain that the microprocessor uses the synchronizing signal to determine if the signal is abnormal. The Applicants respectfully disagree that Shaw discloses checking whether an identified input signal is abnormal by decoding the identified input signal.

The following shows Fig. 3 and col. 6, lines 4-21 and col. 7, lines 3-9 of Shaw:

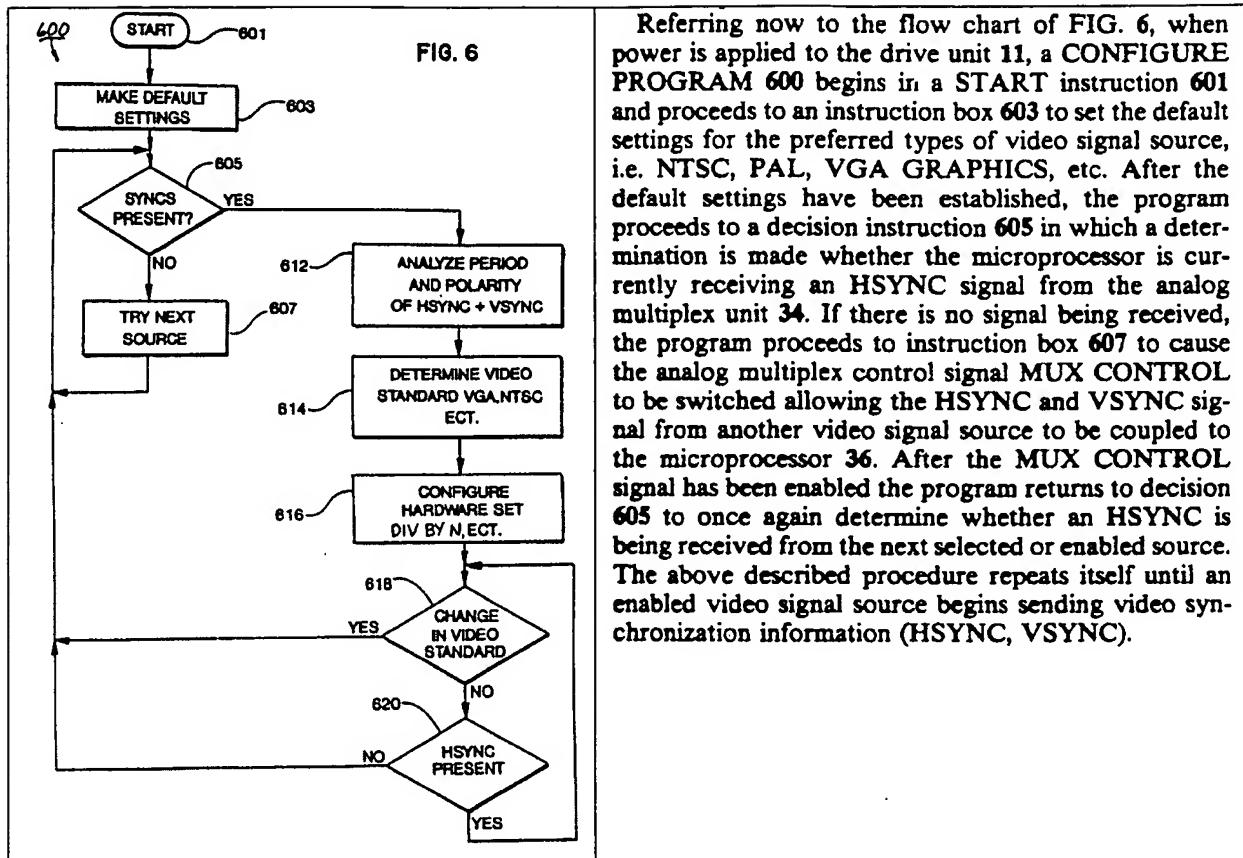


Considering now the interface unit 13 in greater detail with reference to FIG. 3, the interface unit 13 generally includes a signal converter 32 for converting the NTSC television signal from the video cassette recorder 20 into an analog RGB signal suitable for driving the controller 12. The NTSC television signal is coupled to the input of the signal converter 32 by a conductor 20A. As best seen in lo FIG. 3, the interface unit 13 has its input also coupled to the video drive module 26 whose output signals are already in an analog RGB format suitable for driving the controller 12. In this regard, the video drive module 26 in the personal computer 21 has five output signals red, green, blue, horizontal synchronization (HSYNC), and vertical synchronization (VSYNC) coupled to the interface unit 13 on the cable 13B having a set of conductors 26A-E respectively.

Considering now the signal converter 32 in greater detail with reference to FIG. 3, the converter 32 is of a type well known to those skilled in the art, such as a TDA 330 unit manufactured by Motorola and described in the Motorola Linear/Interface Divides Data Book, page 9-183 through 9-190, and in Motorola Application note AN1019D. Other type of converters for convert-

In Shaw, the signal converter 32, which the Examiner alleges corresponds with the signal checking unit that checks whether the identified input signal is abnormal by decoding the identified input signal, converts the NTSC television signal into the analog RGB signal. However, the signal converter 32 does not decode the NTSC television signal. The signal converter 32 is a general converter, such as a TDA 330 unit manufactured by Motorola. The signal converter 32 there is not a type of decoder, but is instead a general converter, such as the TDA 330 unit. Thus, the signal converter 32 of Shaw does not decode a signal, particularly to determine the abnormality of the signal.

The following shows Fig. 6 and col. 9, lines 43-64 of Shaw:



Referring now to the flow chart of FIG. 6, when power is applied to the drive unit 11, a CONFIGURE PROGRAM 600 begins in a START instruction 601 and proceeds to an instruction box 603 to set the default settings for the preferred types of video signal source, i.e. NTSC, PAL, VGA GRAPHICS, etc. After the default settings have been established, the program proceeds to a decision instruction 605 in which a determination is made whether the microprocessor is currently receiving an HSYNC signal from the analog multiplex unit 34. If there is no signal being received, the program proceeds to instruction box 607 to cause the analog multiplex control signal MUX CONTROL to be switched allowing the HSYNC and VSYNC signal from another video signal source to be coupled to the microprocessor 36. After the MUX CONTROL signal has been enabled the program returns to decision 605 to once again determine whether an HSYNC is being received from the next selected or enabled source. The above described procedure repeats itself until an enabled video signal source begins sending video synchronization information (HSYNC, VSYNC).

Shaw discusses that if the microprocessor does not receive the HSYNC signal from the analog multiplex unit 34, the HSYNC and VSYNC signal from another video signal source is coupled to the microprocessor. Accordingly, the HSYNC and VSYNC signal from another video signal source is coupled to the microprocessor only based on whether the HSYNC signal is received, but not based on the decoding of the HSYNC signal. Therefore, Shaw does not discuss or suggest "checking whether the identified input signal is abnormal by decoding the identified input signal when the input signal cable is connected to the display device."

Further, in Shaw, a determination is made as to whether a microprocessor is currently receiving an HSYNC signal from an analog multiplex unit 34, and if there is no signal being received, the program proceeds to instruction box 607 to cause the analog multiplex control signal MUX CONTROL to be switched allowing the HSYNC and VSYNC signal from another video signal source to be coupled to the microprocessor 36. The program continues to determine whether an HSYNC signal is being received from the next source. The procedure repeats itself until an enabled video signal source begins sending video synchronization information (HSYNC, VSYNC).

Thus, Shaw only determines abnormality if an HSYNC signal is not detected and does not determine abnormality if an HSYNC signal is not detected when an input signal cable is connected. Shaw is limited to determining abnormality only if an HSYNC signal is not detected. Thus, there is no indication from Shaw that an input signal cable must necessarily be connected.

While Welmer discusses detecting whether a cable is connected or not, even modifying Shaw does not suggest determining abnormality only if an HSYNC signal is not detected and an input signal cable is detected as Shaw specifically switches to another video signal source even if an input signal cable is not detected. Thus, combining Shaw and Welmer does not suggest detecting abnormality of a signal by decoding an input signal when the input signal cable is connected to the display device.

Further, the Office Action fails to articulate any apparent reason with rational underpinning as to why Welmer would be used to modify Shaw/Sakuda. Regarding an "apparent reason" to combine Shaw, Sakuda and Welmer, the Office Action alleges that "it would have been obvious to 'one of ordinary skill' in the art at the time the invention was made to use the teachings of sensing for input signal cables as taught by Welmer in the display device taught by the combination of Shaw et al. and Sakuda et al. in order to obviate the need for the [sic]."

The Office Action fails to articulate an apparent reason with rational underpinning as to why the Shaw/Sakuda combination would be modified by Welmer. As it is unclear as to why one of ordinary skill in the art would modify Shaw in the suggested manner, the Examiner has failed to establish a *prima facie* case of obviousness.

Therefore, as the combination of the teachings of Shaw, Sakuda and Welmer does not suggest all the features of independent claim 1 and as the Office Action fails to articulate an apparent reason coupled with rational underpinning to combine the reference, claim 1 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Further, the combination of the teachings of Shaw, Sakuda and Welmer does not suggest that "the checking comprises sensing whether an input signal cable is connected to the display device and determining whether the identified input signal is abnormal by decoding the input signal when the input signal cable is connected to the display device," as recited in independent claim 6. Therefore, claim 6 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Also, the combination of the teachings of Shaw, Sakuda and Welmer does not suggest that "the signal checking unit senses whether an input signal cable is connected to the display device and checks whether the identified input signal is abnormal by decoding the identified input signal when the input signal cable is connected to the display device," as recited in independent claim 11. Therefore, claim 11 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

The combination of the teachings of Shaw, Sakuda and Welmer additionally does not suggest that "the checking comprises sensing whether a signal input cable is connected and decoding the input signal when the signal input cable is connected," as recited in independent claim 25. Therefore, claim 25 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

In addition, combination of the teachings of Shaw, Sakuda and Welmer does not suggest that "the signal checking unit senses whether a cable via which each signal is input is connected and checks whether the input signal is normal by decoding the input signal when the cable via which each signal is input is connected," as recited in independent claim 40. Therefore, claim 40 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

The combination of the teachings of Shaw, Sakuda and Welmer further does not suggest that "whether the analog input port receives the normal analog input signal is determined by sensing whether a cable via which each signal is input is connected and decoding the input signal when the cable via which each signal is input is connected," as recited in independent claim 47. Therefore, claim 47 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

In addition, the combination of the teachings of Shaw, Sakuda and Welmer does not suggest that "whether the digital input port receives the normal digital input signal is determined by sensing whether a cable via which each signal is input is connected and decoding the input signal when the cable via which each signal is input is connected," as recited in independent claim 48. Therefore, claim 48 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Also, the combination of the teachings of Shaw, Sakuda and Welmer does not suggest that "whether the input signal is normal is checked by sensing whether a cable via which each signal is input is connected and decoding the input signal when the cable via which each signal

is input is connected," as recited in independent claim 49. Therefore, claim 49 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Claims 2, 4, 5, 7, 9, 10, 12-17, 22-24, 26-31, 36-44, 46, 50-53 and 55-58 depend either directly or indirectly from independent claims 1, 6, 11, 25, 40 and 47-49 and include all the features of their respective independent claims, plus additional features that are not discussed or suggested by the references relied upon. Therefore, claims 2, 4, 5, 7, 9, 10, 12-17, 22-24, 26-31, 36-44, 46, 50-53 and 55-58 patentably distinguish over the references relied upon for at least the reasons noted above. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

In the Office Action at page 15, numbered paragraph 6, claims 20, 21, 34 and 35 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shaw, Sakuda, Welmer and U.S. Patent No. 5,808,693 to Yamashita et al. This rejection is respectfully traversed.

Regarding Yamashita, the Examiner alleges that "[a]s shown in Figure 2 the number of times the input signal is checked is 1, so when it hasn't been checked it is checked and after it is checked once it moves on to the next input signal."

However, claim 20, for example, recites that "if the signal checking unit has not checked the number of set times, the signal checking unit continues the checking [emphasis added]." Fig. 2 of Yamashita does not suggest that a number of times a signal is checked is set, but only shows that the signal is checked once. If the apparatus has not checked the number of set times of 1, the apparatus cannot be construed to continue the checking, as no checking for the signal has occurred previously. Thus, the checking cannot be continued.

Additionally, Yamashita fails to make up for the deficiencies in Shaw, Sakuda and Welmer as to independent claims 11 and 25. Claims 20, 21, 34 and 35 depend either directly or indirectly from independent claims 11 and 25 and include all the features of their respective independent claims, plus additional features that are not discussed or suggested by the references relied upon. Therefore, claims 20, 21, 34 and 35 patentably distinguish over the references relied upon for at least the reasons noted above. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Conclusion

In accordance with the foregoing, claim 4 has been amended. Claims 1, 2, 4-7, 9-17, 20-32, 34-44, 46-53 and 55-58 are pending and under consideration.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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